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APPLICATION NUMBER: *60/604,288*
FILING DATE: *August 24, 2004*
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Certified by

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PROVISIONAL PATENT APPLICATION TRANSMITTAL & COVER SHEET

[Under 37 CFR 1.53(c)]

Our Docket No.: 34662/US | Date: August 24, 2004

First Named Inventor: Deborah Yungner

Title: Integrated Mobile Resource System

Express Mail No.: EV 533898182 US

ADDRESS TO:

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

APPLICATION ELEMENTS

1. ☒ Fee Calculation Sheet (Submit an original and a duplicate for fee processing)
2. ☒ Applicant claims small entity status
3. ☒ Specification Total Pages: 11
   - ☒ Descriptive title of the invention
   - ☐ Cross References to Related Applications
   - ☐ Statement Regarding Fed. Sponsored R&D
   - ☐ Reference to Microfiche Appendix
   - ☒ Background of the Invention
   - ☒ Brief Summary of the Invention
   - ☒ Brief Description of Drawings (if filed)
   - ☒ Detailed Description
   - ☐ Claims
   - ☐ Abstract of the Disclosure
4. ☒ Drawings (35 U.S.C. 113) Total Sheets: 6
5. ☒ Application Data Sheet (37 C.F.R. 1.76)
6. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (*If applicable, all necessary*)
   - a. ☐ Computer Readable Form (CRF)
   - b. ☐ Specification Sequence Listing on:
     - i. ☐ CD-ROM or CD-R (2 copies); or
     - ii. ☐ paper
   - c. ☐ Statement verifying identify of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ Certificate of Express Mail (1 page)
10. ☒ Return Receipt Postcard
11. ☐ Check No. xxxx in the amount of $XX for Provisional Filing Fee
12. ☐ Other:
13. ☐ This invention was made by an agency of the United States Government or under a contract with an agency of the United States Government. Name of the agency:

INVENTOR(S)

Given Name (First and M.I.)	Family Name	Residence (City and State or Foreign Country)
Deborah	Yungner	Chanhassen, MN

CORRESPONDENCE ADDRESS

CUSTOMER NUMBER

25763

DORSEY & WHITNEY LLP
Intellectual Property Department
Suite 1500
50 South Sixth Street
Minneapolis, MN 55402-1498

Telephone: (612) 340-7862 | Fax: (612) 340-8856

Attorney Name: Sean D. Solberg | Reg. No. 48,653

Attorney Signature: | Date: August 24, 2004

APPLICATION FEE TRANSMITTAL SHEET (FY 2004)

Complete if Known	
Application No.	To Be Assigned
Filing Date	Herewith
First Named Inventor	Deborah Yungner
Group Art Unit	Unknown
Examiner Name	Unknown
Atty. Docket Number	34662/US

METHOD OF PAYMENT (Check One)

1. ☒ The Director is hereby authorized to charge indicated fees and credit any over payments to:
Deposit Account No.: 04-1420
Deposit Account Name: DORSEY & WHITNEY LLP

☒ Charge any additional fee required under 37 C.F.R. 1.16 and 1.17
☒ Applicant claims small entity status (see 37 C.F.R. 1.27)

2. ☐ Check Enclosed

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee	Small Entity Fee	Fee Description
160	80	☒ Provisional Filing Fee
770	385	☐ Utility Filing Fee
340	170	☐ Design Filing Fee
770	385	☐ Reissue Filing Fee

Subtotal (1) $80.00

2. EXTRA* CLAIM FEES

	Number Claims		Prior		Extra		Fee from Below*		Fee Paid
Total		-	20	=		x		=	
Indep.		-	3	=		x		=	
Multiple Dependent Claims				=		x		=	

Subtotal (2) N/A

*Calculation of Extra Claim Fees

Large Entity Fee	Small Entity Fee	Fee Description
18	9	Claims in excess of 20
86	43	Independent claims in excess of 3
290	145	Multiple dependent Claim
86	43	Reissue independent claims over original patent
18	9	Reissue claims in excess of 20 and over original patent

FEE CALCULATION (Continued)

3. ADDITIONAL FEES

Large Entity Fee	Small Entity Fee	Fee Description	Fee paid
50	25	Surcharge - late provisional filing fee or cover sheet	
130	65	Surcharge – Late nonprovisional filing fee or oath	
180	180	Submission of IDS	
40	40	Recording each patent assignment per property (times number of properties)	
110	55	Extension for reply within first month	
420	210	Extension for reply within second month	
950	475	Extension for reply within third month	
1,480	740	Extension for reply within fourth month	
2,010	1,005	Extension for reply within fifth month	
770	385	Submission After Final 1.129	
330	165	Notice of Appeal	
330	165	Filing a brief in support of an appeal	
290	145	Request for oral hearing	
110	55	Terminal Disclaimer Fee	
130	130	Petitions to the Commissioner	
50	50	Petitions related to provisional applications	
1,330	665	Utility/Reissue Issue Fee (including advance copies)	
480	240	Design Issue Fee (inc. advance copies)	
770	385	Request for Continued Examination (RCE)	
300	300	Publication fee for early, voluntary, or normal publication	
300	300	Publication fee for re-publication	
110	55	Petition to Revive – unavoidable	
1,330	665	Petition to Revive – unintentional	

OTHER FEE (specify)

Subtotal (3) N/A

Total Amount of Payment: $80.00

Submitted by:

CUSTOMER NUMBER 25763	DORSEY & WHITNEY LLP	Intellectual Property Department Suite 1500, 50 South Sixth Street Minneapolis, MN 55402	
Name: Sean D. Solberg		Phone No.: (612)	Fax No.: (612) 340-8856
Signature:		Reg. No.: 48,653	Date: August 24, 2004

PROVISIONAL PATENT APPLICATION
FOR
INTEGRATED MOBILE RESOURCE SYSTEM

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SUMMARY OF INVENTION

The present invention is an integrated, modular, scaleable, and mobile utility or resource system and apparatus and method of making and using the same. The invention allows for immediate provision of utilities or resources such as potable water purification, electric power, environmentally controlled air (heat cooled or clean room standard filtered or purified air), , and (internal/external) communications capabilities. The system and apparatus offers multiple utility technologies (also referred to as "modules" for purposes of the instant application) packaged in one mobile system that can be tailored for backup, humanitarian assistance and emergency response situations. Each of the system modules, and the system as a whole, can be controlled and monitored using a state of the art command and control system.

The invention possesses numerous benefits and advantages over non-integrated portable utility systems. Electric generators, water treatment systems, environmentally controlled air filtration and conditioning systems, and communications devices are presently available in standalone or paired technologies. Each of these known non-integrated utility systems requires additional utilities, support, and resources from multiple vendors. As an integrated, turnkey solution for utility systems, the present invention provides integration of utilities in one mobile unit with optional online support and system monitoring.

The communications technology, both internal and external, of the present invention can include automatic remote diagnosis and monitoring features which can result in reducing the number of personnel needed for operation and further can minimize field connections and maintenance. In one embodiment, an external communication system contains technology to allow users to have Voice, Data and Image communication protocols present on the unit. The technology of the present invention also can incorporate system integration with internal communication technology allowing the unit and operator to interactively send, receive, and store information about the unit and its operating status. The information may cause changes to the operational status of any or all of the modules in the unit or may provide maintenance related information to people who are co-located with the equipment and with other support organizations. Provisions have been incorporated into the present invention to allow for minimal off-site control and parameter adjustment to accommodate user needs without additional training.

In one aspect of the present invention, the apparatus incorporates a trailer chassis that is capable of being transported via land, air, or water conveyances. Designed to be pulled behind a ½-ton pickup truck in one embodiment, the trailer can incorporate a housing to insulate modules from the elements and to provide sling load capability and noise attenuation.

Scalability can be achieved in one embodiment by connecting two or more apparatuses so that one system can monitor and control multiple interconnected units. Monitoring and control is provided by the integrated and intelligent bus system. Additionally, within the footprint of the existing modules, scalability can be achieved by interchanging modules of like technology that vary in size, capability, function, and capacity.

While multiple embodiments are disclosed, still other embodiments of the present invention will become apparent to those skilled in the art from the following detailed description, which shows and describes illustrative embodiments of the invention. As will be realized, the invention is capable of modifications in various obvious aspects, all without departing from the spirit and scope of the present invention. Accordingly, the drawings and detailed description are to be regarded as illustrative in nature and not restrictive.

DETAILED DESCRIPTION

The present invention, according to one embodiment, includes a Universal Interface and Control System ("integration bus"), which n one aspect of the invention is included in the Control Panel Module. It can provide for sensing, measuring, monitoring, diagnosing, actuating, controlling, and communicating various variables and parameters of modules contained within a typical unit of the present invention. The integration bus, in one embodiment, is a combination of computer software, programming and hardware, related mechanical devices and data conduits that change and monitor the operational status of a device, and a plurality of accompanying devices. A system of computer programs causes the control signal and information to be carried to and received from control interface devices embedded in other modules on the unit. A schematic of the integration bus architecture is shown in **Figure 1**.

The integration bus also provides the flexibility in controlling the operation of one module or controlling the simultaneous operation of all modules in a unit of the present invention. Also enabled is for each module to control (or communicate with) one another when connected and within the scope of the main system simultaneously and interactively in a matrix configuration. Each module also can communicate with other modules of the present invention in a master and slave format. In addition, the control module encompasses related devices, electronic, mechanical, or combinations thereof, specifically designed to enable the matrix control configuration and function.

Physical dimensions of the control module will vary depending on the combination of the selected units. Hardening of the unit to accommodate various environmental and climatic requirements for field use allows for the integration bus to conform to not only these different climatic requirements, but also to meet various customer specifications including mil-spec, etc.

The *Control Panel Module* ("CPM") (22) provides autonomous and remote status of the various modules of the present invention. In one embodiment, the module has various dials and gauges, control switches for various integration bus-connected points of modules, graphics display, central processing and logic units, sensors, actuators, USB Port (12), Controller Bus Harness (14), Sensor Bus Harness (15), software code, and integration bus Communications Module (16). The CPM, depicted according to various embodiments in **Figures 3, 5, and 6**, can provide the integrated sensing, measuring, monitoring, diagnosing, actuation, and control over all apparatus components and modules. It is designed to be tailored for various emergencies and non-emergency situations depending on the unit configurations and optional features selected.

In one aspect of the invention, the integration bus technology, incorporating customized programming, is the product link between all modules and functionality of the apparatus of the present invention. This product is an intellectual and electromagnetic product that

can combine and link all modules together into a complete operational unit that minimizes end-user interaction, training, scheduled and unscheduled maintenance repairs. This technology incorporates state-of-the-art electronic devices and software that combine with software programming and human-machine interfaces. **Figure 2** depicts a typical integration bus workflow, according to one embodiment of the present invention.

According to one embodiment, the *Integration Bus Communications Module (ICM)* provides the communications gateway between any apparatus in the field and the Logistics Service Support Center (LSSC). It can, in one aspect of the invention, include, but is not limited to, the integration bus Communications Set (16); headset, cell phone, and antenna array (17); broadband satellites (34); Internet Service Provider and Wireless (35); and DSL/Cable Modem (37) equipment located at the LSSC (as shown in **Figure 3**). In one aspect of the invention, the ICM (16) is separate from the Auxiliary Communications Module (23).

The Logistics Service Support Center (LSSC), in one aspect of the present invention, incorporates a signal reception capability using DSL or Cable Modem (37) and can consist of, but is not limited to, a Warranty Call Center/Customer Support Center, which connects to users via digital phone line (38); Configuration Management activity (39); Spare Parts database; Maintenance Scheduling (41) activity; Unscheduled Maintenance Repair (42) activity; Scheduled Upgrades (43); and Product Monitoring Services (44). ICM (16) firmware can be upgradeable from remote locations. Remote control of the integration bus is accomplished through either serial or Ethernet communications (either land line or wireless). Real time status of the unit of the present invention is accomplished utilizing similar communications protocols. **Figure 3** depicts the integration bus-LSSC interconnectivity.

Figure 3 depicts a schematic representation of a system of the present invention, according to one embodiment of the present invention.

The present system and apparatus, according to one embodiment, includes six modular systems including power generation, water purification, environmentally controlled air (air conditioning or heating), air filtration or purification (including, but not limited to, clean room standard), communications (external voice, data, and image and internal integration communication bus), and control panel. In accordance with one aspect of the present invention, the communications can include the CHESTER™ communications technology, which is available from Diversified Remediation and Controls, Incorporated, 6701 Bleck Drive, Rockford, MN 55373.

The entire apparatus in one embodiment is packaged, combined, integrated, or housed in one system or unit that is mobile and easily deployable, offering an efficient and responsive solution to humanitarian aid, emergency management/disaster relief, and/or as a portable back up utility support system. This system, in its method of packaging, integrating, identifying, or combining these industry technologies and components provides an efficient, streamlined method of responsiveness, and in most cases, economic efficiencies in the overall life-cycle cost and coordination of logistical deployment, in self-contained, modular, and standalone systems.

The system, apparatus, and method of the present invention, provides various technologies including *integrated modularity; component plug-and-play; device*

scalability; and *integrated command, control, and communications (C^3).* These technologies, when combined and integrated in the apparatus of the present invention, provide a system, apparatus, and method useful for the utility industry or distributed utility industry, i.e. emergency management services, emergency response, humanitarian relief, commercial, residential, construction industry, education, research, recreation industry, and any other known application where an integrated and mobile resource solution is useful, beneficial, or applicable.

One advantage in accordance with one aspect of the present invention is the provision for more than one technology, integrated with the functionality and user-friendliness of the integration bus and human-machine interface, providing the end user, according to one embodiment, with a completely self-contained unit capable of providing life-supporting utilities where needed to provide an efficient, flexible, adaptable, reliable, and responsive resource solution. These utilities or resources can include but are not limited to electrical power, potable water purification, environmentally controlled conditioned or filtered (including, but not limited to, clean room purifying standard) air, and state-of-the-art communications that include both internal and external devices for remote system monitoring and diagnostic in addition to external voice, data, and image. The modules that encompass an apparatus of the present invention are shown in the schematic depicted in **Figure 4**.

A brief description of the various technologies that can be present in an apparatus according to one embodiment of the present invention follows. The description provides a non-technical view into the technology utilization and processes. It is to be understood that these technologies can be included in any combination in various alternative embodiments of the present invention. Again, note that the numbers in parentheses match with corresponding items depicted in **Figure 3**.

Integrated modularity can be achieved in one aspect of the present invention by adapting various interchangeable, best-in-class components on a trailer, which in one embodiment is a ¾-ton trailer (28), and centrally monitoring and controlling them, remotely, using the integration bus technology (1, 14-17, 34-36). Modules included as non-limiting examples in the diagram are an Environmental Control Heat/Cooling Module (18), Air Filtration Module (or purification clean room standard) (19), Water Purification Module (20), Electric Power Generator (21), Control Panel (22), and Auxiliary Communications (23). Supplemental devices include, but are not limited to, any combination of various temperature probes (25); air filters (26); water filters or replacement cartridges for reverse osmosis devices or iodinated resin like technology supplies (27); water and fuel tanks (29, 30); battery backup (31); starter motor (32); self-contained enclosure (33); light sets (33); and assorted adaptors, hoses, and extension cords (33). A solar panel and inverter are included to maintain constant trickle power to the UPS system. **Figure 5** provides a schematic of the overall integrated system of the present invention.

In one embodiment, *Device Scalability* can be achieved by interconnecting two or more apparatuses of the present invention using the Interconnecting Cable Assembly (24). Once a connection has been physically established, the Comparator Monitor (5), located on the integration bus motherboard (1), identifies and monitors all linked modules. This allows the base module to coordinate the output of all units of the present invention under various loading and to shut down individual units when they are not being utilized. Additionally, the controlling integration bus modules share workloads by cycling

redundant units through alternate duty cycles if appropriate. To do this, commands can be passed electronically from the integration bus Comparator Monitor Logic Unit (5) through the Control Bus Harness (14) and Interconnecting Cable Assembly (24) to all linked units. Operating status signals from linked units are then relayed back to the controlling unit through the Interconnecting Cable Assembly (24) and Sensor Bus Harness (15). The benefit of interconnectivity is that one units can pick up the load (or portions of) other units that have failed. Interconnectivity also allows the power generator of one unit to provide electric power to other units where additional power may be needed or in cases where one of the latter's power generator has been taken off-line for maintenance or repair service.

Component plug-and-play capability can be achieved, in accordance with one aspect of the present invention, by programming the Comparator Monitor Logic Unit (5) with individual OEM module parameters and using mounting brackets that are specially fabricated to adapt various components to the system of the present invention. Programming is accomplished via the USB Port (12) using an IBM compatible computer (13). The Comparator Monitor (5) can also be remotely programmed through the Integration Bus Communications Module (16). Plug-and-play technology allows a wide variety of different-sized components with various capabilities to be used with the present invention to meet individual user requirements and flexibility. Plug-and-play adaptability is designed to be remotely upgraded when necessary. The use of specially fabricated mounting adaptors permits OEM manufacturers to mount a wide-range of components to a rail-type system in an apparatus according to one embodiment of the present invention.

Integrated Command, Control, and Communications can consist in one embodiment of three major technologies. They can include the Integrated Bus System, Integration Bus Communications Module (ICM), and Logistics Service Support Center (LSSC). The *Integrated Bus System (IBS)* can integrate the overall command and control function of the units of the present invention. It can, but is not limited to, providing sensing, measuring, monitoring, diagnosing, actuation, and control over all on-board components and linked devices of the present invention. The Integrated Bus System can include, but is not limited to, a main motherboard (1), commercial or proprietary sensors, commercial or proprietary actuators, Control Bus Harness (14), Sensor Bus Harness (15), and Interconnecting Cable Assembly (24). The motherboard (1) can be located on the Control Panel Module (22) (see **Figure 6**) and can be attached to the Control and Sensor Bus Harnesses using standardized connectors. The motherboard (1) in one embodiment contains the Integration Bus Standard Sensor Protocol Adaptor (2), A-D Interface (3), Signal Decoder Circuitry (4), Comparator Monitor (5), Diagnostic Analyzer (6), Fault Code Generator (7), Data Storage Devices (8), Signal Converter (9), D-A Interface (10), Integration Bus Standard Controller Protocol Adaptor (11), and USB Port (12).

The following modules are available to be integrated into a unit of the present invention. It is understood that these modules can be included in any combination in various alternative embodiments of the present invention. In one embodiment, any module can include the plug-and-play capabilities as described to allow for various system configurations.

In one embodiment, the *Power Generation Module* ("PGM") (21) can provide basic power to all components of the present invention as well as auxiliary power for externally

attached equipment and tools such as light sets (33), power saws, etc. It can include, but is not limited to, an electric generator (21), fuel tank (30), battery, battery backup, battery inverter (31), starter motor (32), and extension cords (33) coupled to a built-in power grid (see **Figures 4, 5**). The grid can be a system of power outlets or technologies allowing auxiliary power sources including but not limited to fossil fuels, wind, water, solar, or fuel cells, to work in parallel or to substitute for the prime mover of the generator. Once connected to a system of the present invention, the auxiliary power input falls under the regulatory scope of the control module. The generator can produce necessary power for the control module, the water purification module, the air filtration module, the communication module, or other modules as customized by end users. In one embodiment, the bulk of the electricity produced will be conveniently available for local area consumption to power emergency equipment, lighting, and other desired electrical devices, including provisional power to a given or existing infrastructure where power has failed (ie, power tools, motors, pumps, and lighting).

The power generation module in one aspect of the invention provides electricity to power devices in the unit and other potential external equipment and tools. This module consists of an electric generator that may be powered by fossil fuels (including synthetic diesel, various military JP fuels, diesel, kerosene, and others), wind, solar, water, and other future prime mover technologies such as fuel or gel cells. In an alternative embodiment, the power generation module can also consist of a micro generator technology or advanced technologies derived from nano technology, medical device battery technology, etc. Internal fuel storage as well as external connection to fuel supplies can be included in the unit. The power generation module can be configured with automatic, electronic system controls to produce electrical power at a quality level consistent with that provided by an electrical utility. In one embodiment, the management of this electrical power produced by the generator set will be connected, or disconnected, to the power grid of the present invention by means of automatic transfer switches (or switch gear). The switchgear will work in conjunction with the integration bus control system to ensure proper management of various sources of electrical power.

In one aspect of the invention, the power generation module contains interfacing equipment to provide convenient, switchable power supplies for either US standard 60 Hz power or International standard 50 Hz power. The power module includes a standby UPS which both conditions generated power and provides emergency power for critical system modules and the integration bus components for communications and overall computer functionality during non-electric power generation periods. The UPS system is trickle charged through a unit mounted solar collector, main generator, and an inverter. **Figure 6** provides a schematic of the power generation module and interconnectivity with the control panel module, according to one embodiment of the present invention.

The *Water Purification Module* ("WPM") (20), in one aspect of the invention, purifies and disinfects water from available sources to make it fit for human consumption. Purification can be accomplished, according to one embodiment, by reverse osmosis (RO) with a full ultra-violet back-up wrap for U.S. water applications or iodinated resin or the like for international applications, all depending on water conditions. Alternatively, a variety of known purification and disinfecting media or methods can be adapted to the apparatus to handle most water impurities. The system of the present invention, according to one embodiment, will utilize any known water purification treatment system, method, technologies, process, or technology solution. These methods, processes, or technologies may be derived from, but not limited to, technologies including coagulation,

sedimentation, ion (exchange), iodine (including Iodinated Resin technology), activated carbon, and membrane technologies. **Figure 7** depicts the typical interconnectivity of the water filters, reverse osmosis, and ultra-violet (UV) systems with the unit's control panel module, according to one embodiment of the present invention.

The unit's water purification module, according to one embodiment, utilizes membrane technology for rejection of dissolved solids to meet purification standards. This process may create single distilled water. Ultraviolet backup can be included for elimination of bacteria or similar contaminants in the storage container. The unit's water module can also include a pre-conditioning de-silting package for elimination of sand and silt from the feed water thereby eliminating the need for filter changes on a non-scheduled basis.

The control panel module (with optional features and capabilities), according to one embodiment, can release a warning to execute a preprogrammed action plan when the consumables such as the purification cartridge degrade to a level requiring replacement. The unit provides for the use of a variety of purification and disinfecting media or methods with the installed control interface module and auxiliary systems.

The *Air Filtration Module* ("AFM") (19), according to one embodiment, filters harmful air borne particulates to make air fit for humans to breathe. In one aspect of the invention, the module includes, but is not limited to, an air blower (19), air (or hepa) filters (26), air ducting (33), and a self-contained enclosure (33) as depicted in **Figure 3**. A variety of known purification and disinfecting media or methods can be adapted to the apparatus to handle most emergency or non-emergency situations. The control panel module (with optional features and capabilities) can, in one embodiment, release a warning and execute a preprogrammed action plan when the consumables such as the filter cartridge degrade to a level requiring replacement. The unit can provide for the use of a variety of purification and disinfecting media or methods with the installed control interface module and auxiliary systems. **Figure 8** shows how the various components of the air filtration module are connected to the control panel module of the apparatus, according to one embodiment of the present invention.

The *Environmental Control Module* ("ECM") (18) provides temperature control. It may consist of a heat system and/or cooling system, which can be attached to the Air Filtration Module (19) (see **Figures 3, 4**) according to one embodiment. The ECM can be used to moderate the temperature of the air blown through the AFM in an enclosed environment or to provide conditioned, filtered air into a non-conditioned space. Alternatively, the ECM can be used without air filtration. The ECM can use environmentally-friendly refrigerant oil in a closed loop DX cooling/heating system. All components integrated into this module can, according to one embodiment, be designed to be energy efficient so as to minimize electrical power consumption and thereby prime mover fuel source usage. Ancillary components can be integrated into the ECM such as dehumidification or similar environmental control systems. **Figure 6** depicts how the ECM and AFM are interconnected, according to one embodiment of the present invention.

The *Auxiliary Communications Module* ("ACM") (23) can, according to one embodiment, provide transmission and receiving capabilities that can be useful for remote command and control communications. The module and its technologies may be applicable to a variety of known situations and applications, including, but not limited to, emergency or non-emergency communications backup support, emergency relief operations,

humanitarian aid, etc. The ACM can provide enhanced two-way communications through an integration of satellite and radio communication methods. Additionally, the module can include additional technologies such as satellite Internet communications. In one aspect of the invention, the module can include, but is not limited to, a transmission control head (23), antenna or dish (17), and headset and microphone (17) as shown in **Figure 4**. A variety of auxiliary communications modules can be adapted to the apparatus to meet the specific needs of individual users. The integration bus can allow a variety of communication media to be included in the unit.

Typical external communications media can include real time voice, video, image, and data transmission modes. Customer-specified communications options could be readily configured with the integration bus' universal plug-and-play capabilities to provide these media modes. Auxiliary communications can be maintained through the UPS system in the PCM when the power generator is off line. The amount of time allowed for this redundancy is controlled by the size of the UPS system elected by the user during the specification process or by specified times for standard units of the present invention.

In one embodiment, the software utilized by the ACM allows any known software program to be used by multiple workstations simultaneously. The software does not alter or require custom programming to perform its functions. It can be a freestanding product usable over an array of off-the-shelf and custom programs. This facilitates integration with other plug-and-play aspects of the apparatus. According to one embodiment, the software provides the following salient points:

- It can be installed on almost any computer and runs on most major operating systems (including Windows, Macintosh, UNIX and Linux).
- Users need not be running the same operating system to work together.
- It offers multi-directional network presentation capability – any group member's desktop can be shared during the session.
- Users may engage in-group chat, either among the entire working group or privately among selected members of the working group.
- Software is an integrated set of tools tailored to a user's organizational needs.
- Software provides Interactive sharing of data and information.
- Software allows the creation of electronic audit trails.

The trailer assembly, in one aspect of the invention, is a self-contained, customized trailer or any other known transportation structure to encompass the technology modules of the system and to meet the transportation and terrain transit requirements for delivering the apparatus reliably to the site.

In one embodiment, the structure is a trailer with a chassis that can consist of an all-steel, double axle system with suspension, braking, leveling system, and housing units. The trailer is rated at ¾ tons and is designed to be pulled behind a ½-ton pickup vehicle. This configuration provides flexible and highly mobile transportability, including ruggedization if required, to remote locations for users.

According to one embodiment, the transportation structure is designed to be equipped with an external fuel tank bladder to provide fuel for the power generator to operate all on board modules. The fuel source is described in the power generation module section. The entire trailer unit, in an alternative embodiment, can also be designed to be air

transported or sling loaded by helicopters to ease placement in extremely remote locations. Dual axles can be provided for an extra measure of safety and redundancy, as well as a heavy-duty braking system. The engineering and design technology of the trailer can include consideration for modularity or transportability, including, but not limited to, moveable skid-loaded interchangeable module mounts, center point of gravity, transportation rack or carrier for tent, accessories and/or equipment, four-point lift container, sizing for standard container transportation, turnbuckles, d-rings, wheel chocks, level loading, universal symbols, etc.

In one embodiment, the structure includes a housing that can have a lockable storage compartment for ancillary items which may include tools, chords, hoses, pumps, blowers, first aid, (defibrillator/medical equipment/supplies), cargo net, manuals, MSDS, warranty kits, spare parts, etc. It can also include an alarm security system and a megaphone/PA system. The housing can provide protection from the elements for all components. It can also act to insulate the sounds of the power generation unit and to properly circulate cooling air over internal system components. **Figure 9** is a schematic of the trailer module, according to one embodiment of the present invention.

The apparatus can include an air compressor module. For example, according to one embodiment, the air compressor module is a 90-125 PSI air compressor (33) with a 2-5 HP motor capable of delivering 7.8-15.9 CFM. The air compressor unit can also include a 4.5 gallon tank, air hoses, and assorted nozzles. In one aspect of the invention, the module can inflate tent compartments, bedding, life rafts, or test equipment, and further can affect field repairs on tires and other field site devices.

A water pressurization system (33) is provided in one embodiment of the present invention. The system can be configured to clean operational equipment, water filters, storage tanks, and accessory items. Further, the system can provide pressured water for any known purpose. In one embodiment, the system is capable of delivering pressurized water up to 3500-4500 PSI.

The apparatus can, in one embodiment, include one or more tents or shelter or housing structures of any known kind. For example, the structure can be a 20'x20' tent (33) such as the one depicted in **Figure 10**. These tents are designed to provide an operations center and sleeping quarters for emergency staff or any other people requiring shelter. In one aspect of the invention, the tent can utilize inflatable tent technology, including the use of compressors and lightweight and durable materials that are safety/fire approved. In one alternative embodiment, ducting from the Environmental Control Module and electrical cable hookups can be built into each tent.

Although the present invention has been described with reference to preferred embodiments, persons skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention.

SCHEMATICS AND WORKFLOW DIAGRAMS

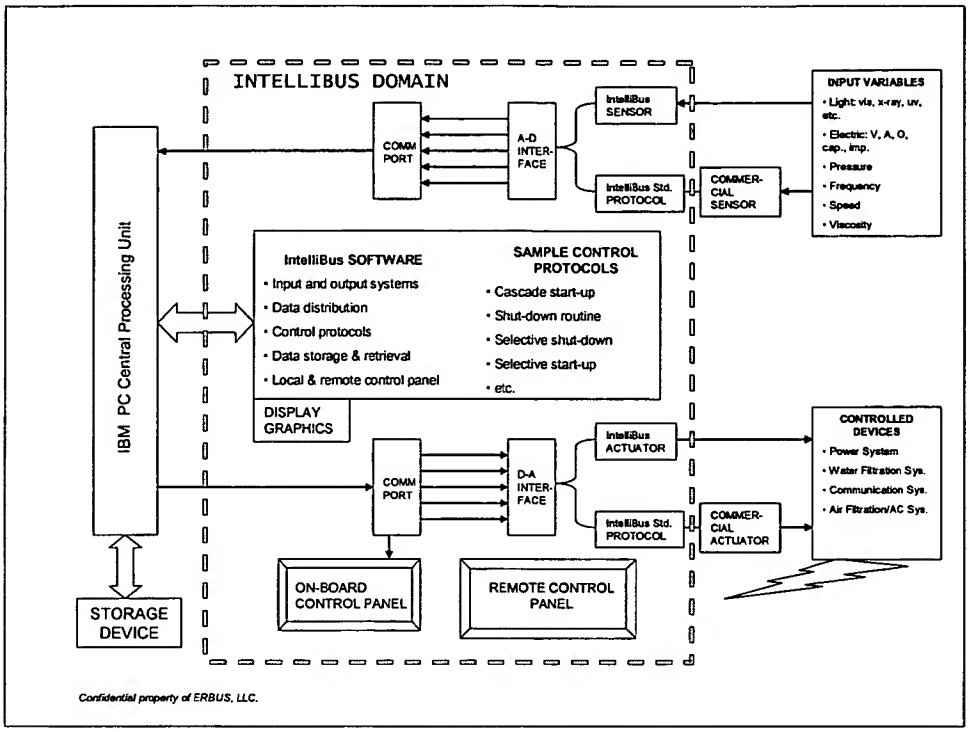

Figure 1. Integration Bus Schematic

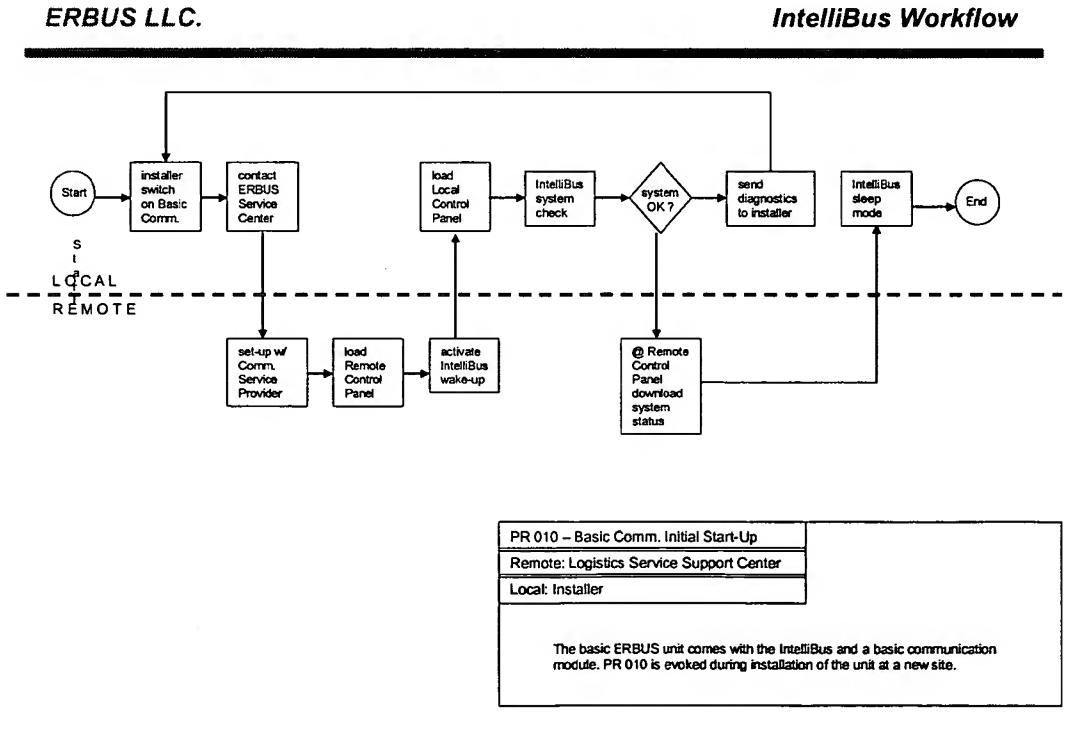

Figure 2. Integration Bus Workflow Diagram

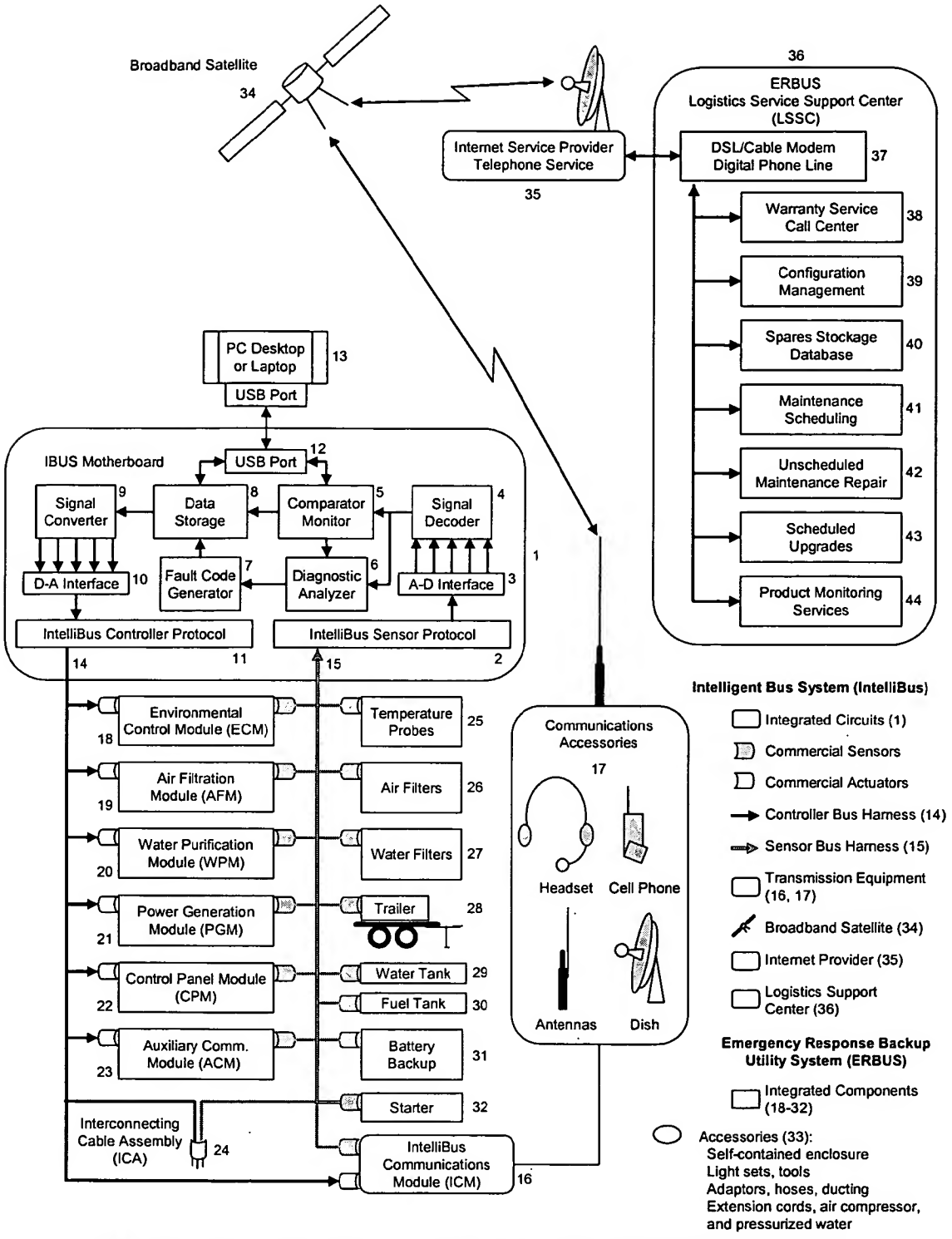

Figure 3. Integration Bus Technology

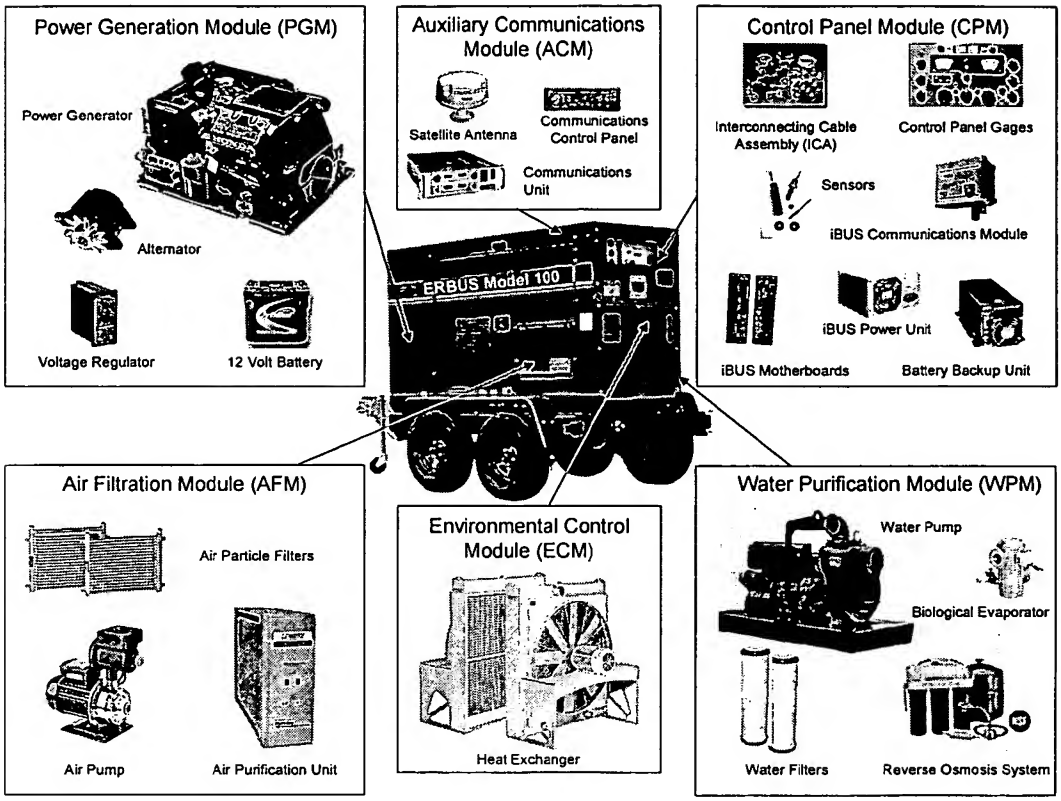

Figure 4. Model 100 Modular Components

ERBUS Model 100

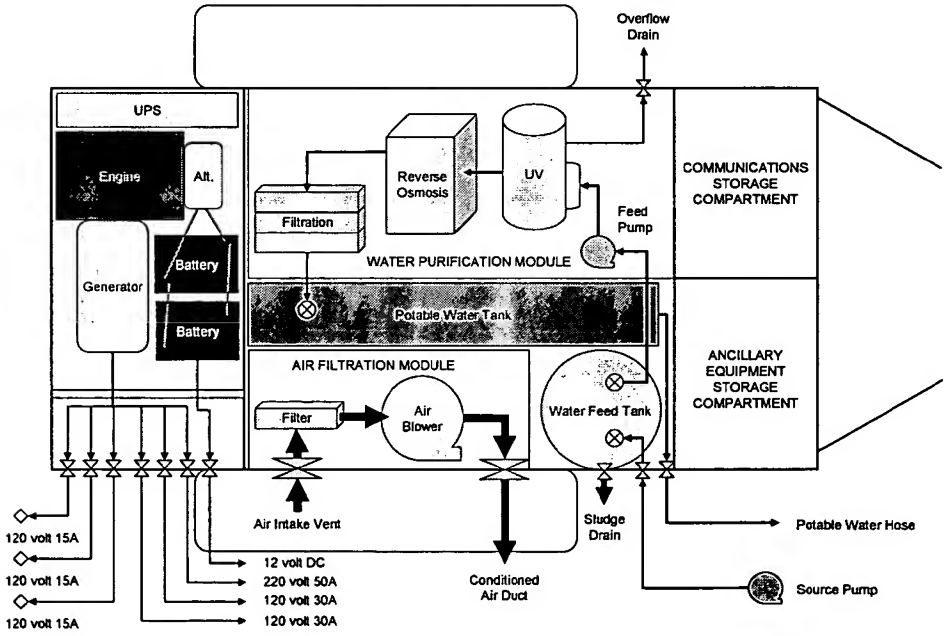

Figure 5. Model 100 Schematic

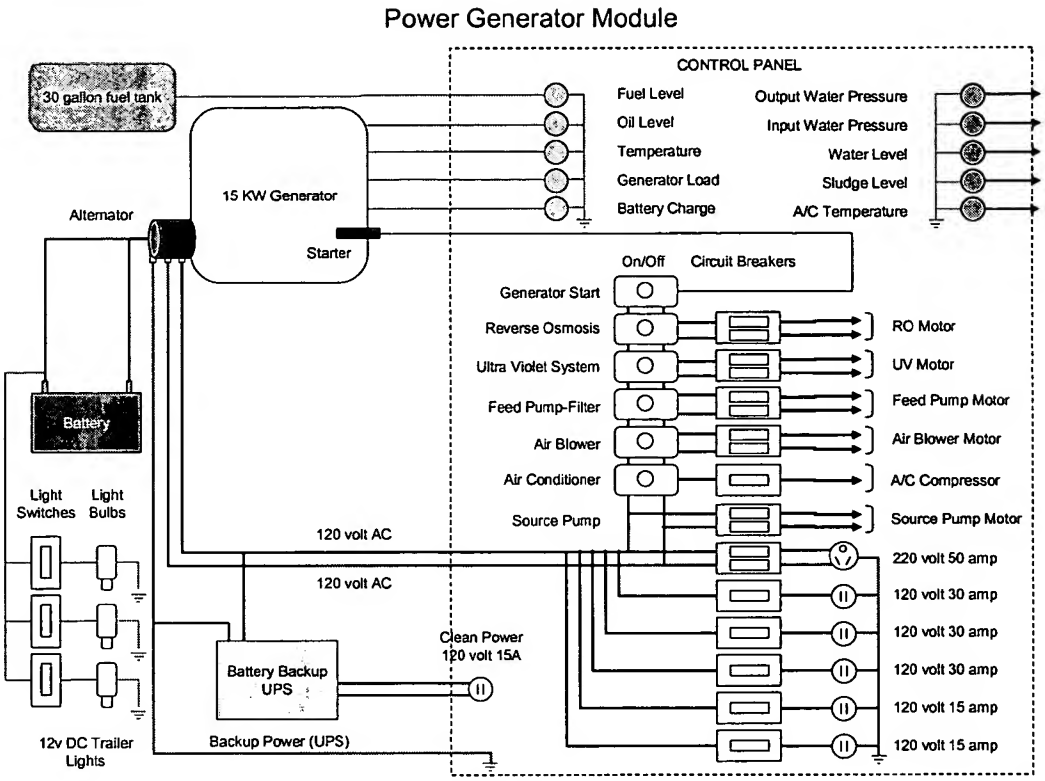

Figure 6. Power Generation Module Schematic

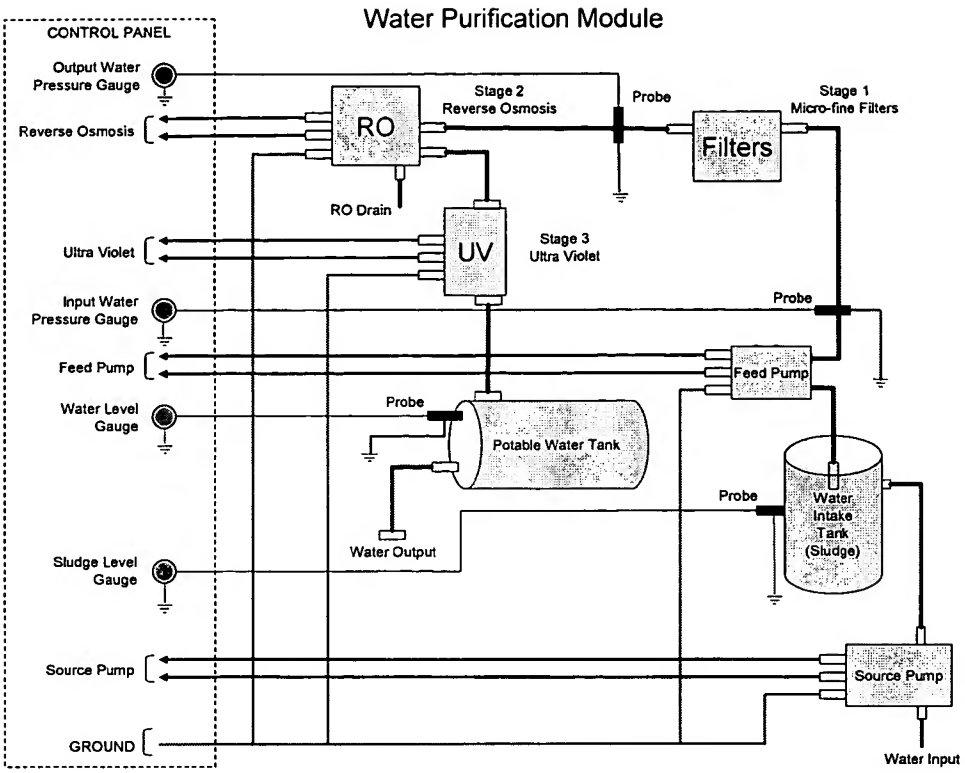

Figure 7. Water Purification Module Schematic

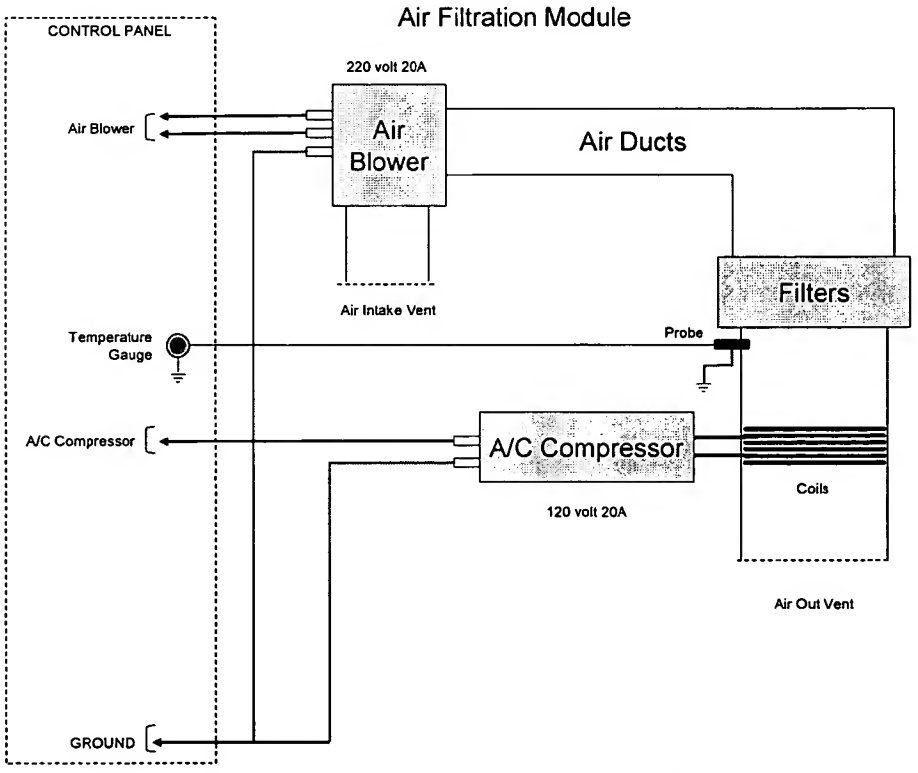

Figure 8. Air Filtration and Environmental Control Module Schematic

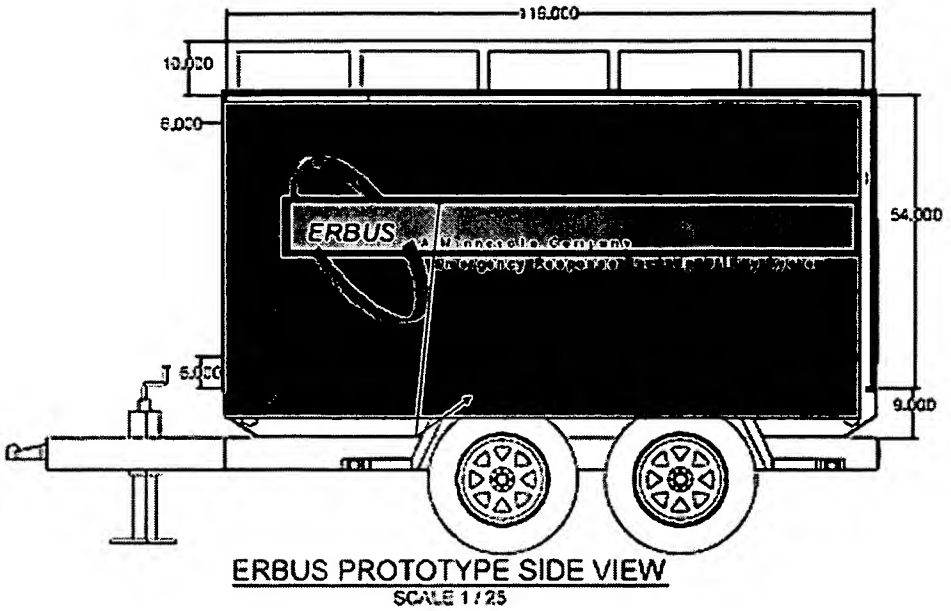

Figure 9. Trailer Schematic

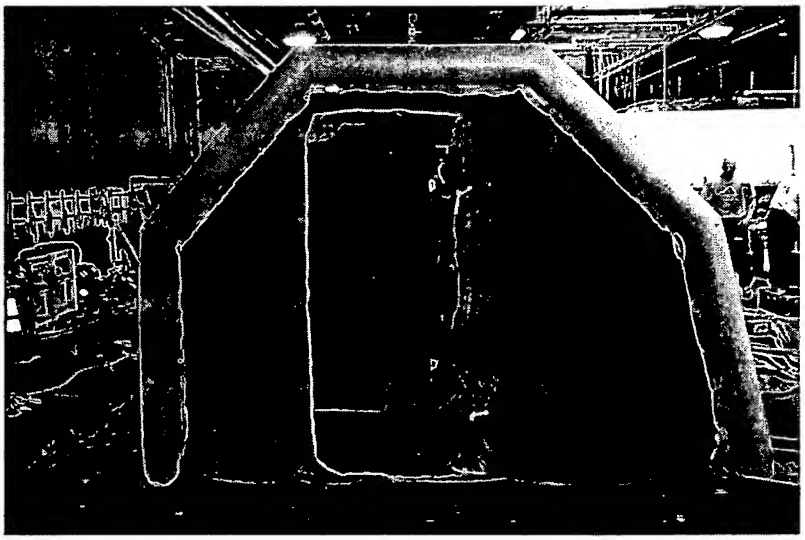

Figure 10. Self-Contained Shelter Enclosure (20x20 Tent)

APPLICATION DATA SHEET

Inventor Information

Inventor One Given Name::	Deborah
Family Name::	Yungner
Postal Address Line One::	2300 Lukewood Drive
City::	Chanhassen
State or Province::	MN
Country::	US
Postal or Zip Code::	55317
City of Residence::	US
State or Province of Residence::	MN
Country of Residence::	US
Citizenship Country::	US

Correspondence Information

Name Line One::	**Sean D. Solberg, Esq.**
Address Line One::	DORSEY & WHITNEY LLP
Address Line Two::	Intellectual Property Department
Address Line Three	Suite 1500, 50 South Sixth Street
City::	Minneapolis
State or Province::	MN
Postal or Zip Code::	55402-1498
Telephone::	612-340-7862
Fax::	612-340-8856
E-Mail::	patentsmpls@dorseylaw.com

Application Information

Title Line One::	**Integrated Mobile Resource System**
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Application Type::	Provisional
Attorney Docket Number::	34662/US

Representative Information

Representative Customer Number:: **25763**